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Beam Hopping Self Addressed Packet Switched  
Communication System with Multiple Beam Array Antenna

ABSTRACT OF THE DISCLOSURE

A data routing subsystem (200) for a  
5 communication satellite includes an inbound module  
(602) that accepts demodulated uplink data. The  
inbound module (602) includes a routing table (702)  
that stores queue tags (714) specifying downlink beam  
hop locations (302, 304) for the uplink data. The  
10 subsystem (200) also includes a self addressed packet  
switch (608) having an input port coupled to the  
inbound module (602), and an outbound module (610)  
coupled to an output port of the switch (608). A  
memory (804) in the outbound module (610) stores the  
15 uplink data in accordance with the downlink beam hop  
locations (302, 304). A multiple beam array antenna  
(116-122) is coupled to the outbound module (610).  
The multiple beam array antenna (116-122) includes a  
first feed element (116) assigned to a first downlink  
20 beam hop location (302) and a second feed element

(118) assigned to a second downlink beam hop location  
(304).